IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

STATE OF OKLAHOMA, *et al.*,	
Plaintiffs,	
v.	
	Case No. 4:05-cv-00329-GKF-SAJ
TYSON FOODS, INC., *et al.*,	
Defendants.	

Third Declaration of Dr. Victor J. Bierman, Jr.

1. My name is Victor J. Bierman, Jr.

2. I earned a PhD in Environmental Engineering from the University of Notre Dame in 1974. I previously earned a master's degree in physics from the University of Notre Dame in 1971, and an A.B. in Science from Villanova in 1966.

3. I am currently a senior scientist with LimnoTech, an environmental consulting firm specializing in water quality issues and water system modeling. I served previously as a National Expert in Environmental Exposure Assessment for the United States Environmental Protection Agency. I was also formerly an Associate Professor in the Department of Civil Engineering at the University of Notre Dame.

4. I have nearly 35 years experience in the development and application of water quality models for eutrophication and the fate and transport of chemicals. I have published or contributed to over 100 technical papers and reports regarding these subjects. My experience includes the assessment of water quality issues related to nutrients, algal blooms, nitrogen fixation and ecosystem processes. I have also analyzed the fate, transport, partitioning and bioaccumulation of chemicals. I have conducted assessments in a wide variety of locations including rivers and lakes, and including U.S. EPA superfund sites. I have extensive experience using computer models to analyze aquatic systems and addressing errors and uncertainties in such models, and have used and analyzed such models as a consultant and expert in environmental litigation matters.

5. I have been retained by the Defendants in this matter to analyze and respond to the Plaintiffs' modeling of the Illinois River Watershed (IRW). I have reviewed the reports submitted by Darren Brown, Lowell Caneday, Berton Fisher, Gordon Johnson, Todd King, Robert Lawrence, Roger Olsen, Megan Smith, Robert Taylor, Chris Teaf, Bernard Engel, Valerie Harwood, Jan Stevenson, Dennis Cooke, Eugene Welch and Scott Wells in support of Plaintiffs' case.

6. Plaintiffs' experts, Drs. Engel and Wells, appear to have based their expert reports on the results of several working models of the IRW and Lake Tenkiller. These working models consist of not just computer programs, but of the associated input files, output files and data files that, taken together, embody the complete set of results put forth in Drs. Engel's and Wells' expert reports.

7. In connection with Drs. Engel's and Wells' reports, Plaintiffs have produced a large number of individual computer programs, input files, output files and data files. In addition, Plaintiffs have recently provided some additional information regarding the models used by Plaintiffs' experts.

8. Based on the information and materials provided by Plaintiffs to date, I and my staff have been able to run versions of both experts' models. But, as a result of the deficiencies in Plaintiffs' production specified below, we have not been able to reproduce or analyze the complete set of results contained in Drs. Engel's or Wells' expert reports.

9. With respect to the model used by Dr. Wells, my team and I have run many combinations and permutations of model executables and input files produced by the Plaintiffs, but have not been able to reproduce the results contained in Dr. Wells' expert report. There are numerous ways to assemble the model executables and input files that Plaintiffs produced, each of which will produce a different version of a working model with different results, but none of which match those in Dr. Wells' expert report.

10. On June 18, 2008, Plaintiffs provided additional information about Dr. Wells' model, including the types of computers used, the model executable used and that "Run143 was the run used in the Wells' Expert Report." Yet, even using this more specific information my team and I were still unable to reproduce the results contained in Dr. Wells' report.

11. Upon further investigation, my team and I determined that the results in the model output files produced by Dr. Wells for "Run143" do not even match the results in his own expert report. Furthermore, using Dr. Wells' own input files for "Run143," my team and I were not able to reproduce Dr. Wells' own output files for "Run143."

12. These conflicting results highlight the need for Plaintiffs to provide a step-by-step protocol for reproducing all of the results in Dr. Wells' report using the materials produced to date by the Plaintiffs. This protocol should include the specific files used (file name, date/time stamp and directory/folder location) and the sequence in which each file was used to exactly reproduce all of the results in Dr. Wells' report for the calibration and all of the scenarios. Without this information, we cannot conduct a complete analysis of Dr. Wells' model or results.

13. With respect to the models used by Dr. Engel, my team and I have been able to run GLEAMS and reproduce Dr. Engel's results for hydrology. However, deficiencies in Plaintiffs' production have precluded us from determining whether we can completely reproduce Dr. Engel's results for phosphorus loads.

14. Furthermore, Plaintiffs' production fails to provide complete information regarding the model files and the input and output files for the phosphorus routing models developed

by Dr. Engel. These routing models, one for each of the three watersheds, are critical links between the phosphorus loads computed by GLEAMS (plus the wastewater treatment plant phosphorus loads) and the phosphorus loads delivered to Lake Tenkiller.

15. In my previous involvement in matters related to environmental disputes, I have produced and received models of the kind at issue in this litigation. In my experience, the party who developed the model will typically produce all of the information and materials necessary for the receiving party to run the model and reproduce the developing party's results. In this case, my team and I have not received the necessary information and materials.

16. To date, the effort of trying to reproduce and analyze the models and results of Drs. Engel and Wells has consumed a great deal of time and expense because my team and I have not received the necessary information and materials.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on July 7, 2008